

WE'RE SHATTERING THE GLASS CEILING. GET READY FOR WHAT LIES BEYOND...

SHATTERED \ PRISM

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ISSUE 2

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The Last Word on the Last Pantheon

Tade Thompson and Nick Wood

Whenever a new African superhero or comic is announced, I prepare myself to be irritated. The inevitable reviews or interviews will no doubt say something like this is the first superhero from the “Dark Continent” or Africa is finally opening up to the science fiction world or some such. It irritates me that they do not research the topic before writing the piece. There have been African superheroes since the early 70s.

Δ

On February 18, 1979 in Algiers, it snowed in the Sahara for about an hour. This factoid remained in my head for decades, but I always thought it would be a good starting point for a story. Two gods battling it out and hitting each other so hard that for a time the weather becomes deranged.

Δ

This guy called Nick Wood wrote an article on an African superhero called Mighty Man and he was speaking my language. Nick and I had been in the *AfroSF* Anthology, and we both belonged to The Afro-Punk Collective Facebook group, so in 2013 I reached out to him. We had a long discussion about superheroes and African history and comics. The germ of the idea for The Last Pantheon came when Nick toyed with the idea of writing an article about the lost African superheroes. That evolved into us deciding to write a story together. We didn’t talk of length, but it was to be about deconstructing the African hero and fully illustrated. Ahh, ambition. How cute. That didn’t happen.

Δ

Somehow, things we felt strongly about kept coming up. The secret wars of the CIA in Cold War Africa, the killing of Patrice Lumumba, the Rumble in the Jungle between Muhammad Ali and George Foreman, Kwame Nkrumah, the Pan-African movement, the violence in Angola, the murderous legacy of Leopold II, von Daniken’s *Chariots of the Gods?* hoax, MK Ultra, MK Delta, and a whole lot of American comic book lore with which we were both familiar. What is a superhero, really? Why beat up criminals?

Cui bono? Is the beloved caped, steroidal tights-wearing powerhouse not just another way of maintaining a status quo that requires examination? We also thought since the Cold War was playing out, we could incorporate the concept of MAD: Mutually Assured Destruction. This was the Pig Iron from which The Last Pantheon emerged.

Δ

The comic characters we were trying to pay homage to were Mighty Man, who was a South African pastiche of early, 'single-bound' Superman, and Powerman, who was an African analogue of Silver Age Superman, except his weakness was snakebite (but cured by electricity). We thought since African superheroes are largely unknown to the West, it would be better to have archetypal characters for easy recognition. We even had shorthand like "Loisalike character" which is self-explanatory. I did some concept art in India Ink, and you can find some of it around the Net. It's possible we will release it later as a standalone Deluxe edition which will be illustrated as God intended.

Δ

Since Nick knows South Africa and I know Nigeria, we decided to set the story in both. We also decided to each take one of the main protagonists and write their backstory and dialogue, to give an individual feel. We wrote the chapters in a round-robin fashion, giving each other only broad strokes of a plot. It was an amazing collaboration. We used email, telephones and Skype. We did not have a single disagreement and became friends in the process, meeting each other's families. Let's just say literary or artistic collaborations have a history of not being pleasant, and we were both worried at the start, but it turned out well. When we finished the first draft we had a meeting in a North London café to discuss revision of the entire book.

Δ

We had to cut a few things because we didn't know how it would affect people. For example, comic legend Joe Orlando was involved in the African comics of the 70s and there was a whole conspiracy sub-plot which I was invested in, but Nick wisely declared to be risky. There was a long bit about them inspiring some of the legends and gods of different African pantheons, but we truncated it. We did make them a bit like gods in that they would need worshippers in order to manifest their powers, which led to

the TV interview being a source of power, since viewers would now think of them.

Δ

Nick wanted to submit to Tor.com, which was sensible, but I said we almost had a duty to submit to AfroSFv2. We also considered self-publishing; which was not out of the question. We deliberately left the ending so that the story could be continued, preferably by a female writer or writers. Onwards, to the Super-Women of Africa too!

Δ

My novel *Rosewater* is a near-future science fiction story set in Nigeria, and will be released from Apex Books in September. I also have a novella called *Gnaw* from Solaris Books later this year. I'm also working on the sequel to my alternate history noir novel *Making Wolf* (which just won a Golden Tentacle for best debut novel at the Kitschies). Nick has an alternative history novel *Azanian Bridges* that came out this Easter, set in a current South Africa where apartheid has survived. Together, we both care about helping to hoist the banner of African SFF.

The last word?

AMANDLA!

Notes Toward a Performance: The Narrow Bridge, December 2001

Vajra Chandrasekera

We're stuck at the foot of the narrow bridge, trapped in honks and rain and the yellow smell of fuel and the river. Inside the car it's humid and close and the wiper squeaks on the windshield.

We just got here and the play has barely begun out on the bridge: this is still Act One, raw id, all base urges and undignified thrusting. I'm halfway through refusing to explain myself to my friend K.

—This is *about* the refusal-to-explain, I say, —We have to be the face without windows.

—What about the face without windows, K asks. The studio audience laughs. We avoid giving them cues or looking directly at the camera (which is difficult to avoid, technically, because we can't see into the direction of snidht), but they've learned to track comic beats like watching for enemy submarines on sonar.

—What windows?

—To the soul, I say,—which doesn't exist, or we don't have them, however it works. We're anatman and it's our cultural heritage to have faces without windows, to refuse to explain. It makes me want to give it an official acronym like R2E and get the United Nations to define it as a proposed norm for interpersonal affairs in postcolonial discourse. Comprehension is not an absolute right and the audience forfeits any entitlement to explanation! R2E! The face without windows!

—Easy, K says, and I can't tell if he means that I should calm down or that he thinks the implementation of my proposed norm is feasible. I opt to believe the latter, but I don't tell him this.

For a few minutes this illusion stands while we sit quietly and watch Act Two unfold. Act Two is all ego, the strut and confrontation, the righteous indignation.

Every evening at rush hour, the standoff at the narrow bridge replays in miniature the history of human confrontation. It's the sort of thing one would livetweet, only Twitter won't exist until the ceasefire ends. It's 2001 and it's a week to Christmas and there are no gods, queens or monoliths bent on uplift. Only the quotidian world and, of course, the studio audience.

K's driving, we're in his 1971 Mark III Ford Cortina which is conveniently painted the colour of rust. The floor has mostly faded away in a lattice of tetanus holes: now that we've stopped moving, every few minutes I reach carefully through one of the larger holes to pick up pieces of the crumbled asphalt from

the street below, then furiously winch down the window a few inches so that I can throw it in the river, or at least in the direction of the river. It's getting dark and we can't see much in the rain.

—Did you say something about a proposed norm? K says, —like with a ring on bended knee and Urðr fluttering her hands and going omg, omg, omg, yes, yes, yes—

K's always been better than me at performance. The studio audience loves him better than me.

—That's a *norn*, I say, —And why always an Urðr and never a Verðandi, you know? That's racist. Why does this always take so long? Who builds a bridge so narrow it only has one lane?

—Let's find out, K says. We go live to this bystander uncle squatting on the grass at the foot of the bridge not three feet from my window when I winch it all the way down. He's soaked by the rain but doesn't seem to care. He's bare-chested and I can count his withered old-man abs. Opening the window blows all the rain into the car and for a moment everything is blurred in water and it's as if we'd slipped over the edge and fallen into the river, but then it drains away through the holes in the floor and we achieve an equilibrium suspended in the brack and the brume. Water beads on my lip. It tastes saltier than it should, since this river doesn't reach the sea for another five kilometres. We narrate these things for the studio audience to understand.

I'm pretty sure the occasional loud splash in the distance is bodies hitting the water after being flung off the bridge. Act Two is just as violent as Act One: only heroes participate in either of them. It's a protagonist sort of place to be. K and I always time our commute so that we're never anywhere near it. K asks Bystander Uncle for his learned opinion on the history of the bridge, and we wait while he thinks up lies to tell us. There are gunshots in the distance. Behind Bystander Uncle and concealed by his skinny ass begins the secret gravel path to the rocky slope that in sunnier weather boys risk their necks and bicycles on. We can't see it from this angle and K doesn't know it's there but I know because (time travel, the long way around) in 1991 I used to ride my bike down there with the other boys and we didn't die and anyway that was an El Niño year and the river was near dry but for a marrow of water and we rode across the cracking bed and inside this bubble of obscene privilege survived the unspeakable rites of childhood in civil-wartime.

This street was once part of the town I grew up in, which long before any of these new wars in my lifetime was a demon-village in my grandparents' day and jungle before that and a feral Lusitanian colony before that and a different jungle before that and a settlement of unbaptized, unenlightened water elementals thousands of years before that: all this past and present now swallowed whole by the aggressively

Protestant-Buddhist city and shrunk in its digestive juices to a neighborhood named after some rich guy's pet mongoose. Cities are animals and they eat and shit like the rest of us but it doesn't do to dig into their droppings, in case you find out what they've been eating.

K is from all the way over on the city's other flank. He tells Bystander Uncle that this makes him basically a foreigner here and entitled to ask tourist questions. I don't want to tell K that I grew up in this neighborhood. I feel like it's already his fault for not knowing that. But I narrate it, subvocalizing, so that the studio audience can keep up. They like it when we're at odds.

Bystander Uncle says the bridge was built in 1971. He says it preceded (just barely) the Maoist uprising and anyway (technically) was constructed while we were a Dominion of bloody Albion, so the fault (of its construction) is not in our stars at all but in the stars of Elizabeth II in her curling ram's horns and Capricorn ascending. He says the Chief Minister of the province, who caused the narrow bridge to be constructed and determined its curious, single-lane, conflict-attracting design, came to the opening but was kidnapped by thugs immediately after the ceremonies, and beaten by said thugs until he pissed (a veritable river of) blood and (unabridged) passed out (of consciousness and of this story alike). Bystander Uncle can't remember what happened next.

—Why would they do that? K asks, —And hey, my car and the bridge are twins.

I'm always afraid K's ridiculous car will get stuck in the middle of the narrow bridge. It's a wide-hipped monster of a car and when we eventually cross the bridge the metal will scrape on both sides. Bystander Uncle shrugs. The attackers were thugs, he conveys. Hooligans. Goondas. He looks like he suspects we don't know what the words mean. I wonder if he's secretly talking to the studio audience, too. I almost expect him to burst into a cross-reference (on page 21 of the mission report subtitled "A Mounting Tragedy of Errors" produced in March 1984 after the sheer violence and body count prompted a fact-finding mission by the International Commission of Jurists in the ancient occidental tradition of a white man telling us what our problems are, section 2.7 is actually titled "Goondas") but he doesn't have to, because I do it automatically on his behalf, for the studio audience.

—Maybe they were revolutionaries, I say, —This was just before the uprising, right?

Bystander Uncle insists that the perps weren't revolutionaries but the long arm of organized crime. With an air of someone bringing out a rhetorical trump, he reveals that the cops hanged the bodies of the locally-sourced revolutionaries from the narrow bridge the following year and they were totally, *totally*, he emphasizes, in triumph—different people. He segues instantly from this to current events, with the air of

someone who has won a conversational thread and doesn't want to leave any room for this victory to be contested.

Instead, he asks us for our opinions on the war. It turns out that Bystander Uncle is a veteran of the second war (while I was riding my bike under this bridge) and has strong opinions on the current (and third) one. Bystander Uncle is also a racist but not a surprise racist because there is no such thing as a surprise racist. He has things to say about the attack at the airport some months ago, with a digression about how you wouldn't think to look at him but yeah he watches the international news and he knows how the Americans are real mad about the planes—the planes that hit their towers, not the planes what got blown up at our airport, though Bystander Uncle himself is equally mad about both and he feels like this year has just been full of plane-adjacent terrorist fuckery and it's all going to end badly with this new government and he's afraid it's all heading in the wrong direction, look at the Americans, *they're* not going to take it lying down so why should we—

Somewhere ahead, at the centre of the narrow bridge, grumpy negotiations finally begin to replace the posturing, the fisticuffs, the gunfire and the knives in the dark, the bodies dropping like turds into the river. We can't really see that far ahead of us but there's a change in the smell of the air. Something petrochemical, something petrichor. Nobody can get across the narrow bridge at all if the two factions don't agree to take turns. That's all it takes but it never comes naturally.

Act Three is all superego, grim and shameful cooperation because everybody is tired and just wants to go home. The shame is felt but mostly unseen, like a shark in the water. The telltale fin is the terrible awareness that everyone has—you can see it in their (untrained) eyes, though they'll never acknowledge it (they don't have to, they don't have faces without windows and their unsouled selves are naked to the world, and to the studio audience) —that they could have sorted this out hours ago if they hadn't insisted on being assholes. The ones who almost-but-ultimately-didn't get to participate in exculpatory violence smell sour, like a ruined orgasm.

—They just declared a ceasefire, K tells Bystander Uncle, who is either so shocked by this revelation that he shuts up, or he already knew about it and is in denial so complete he can no longer participate in conversations that make reference to it.

—The war's on pause for the next six years and we've got a box full of Norwegian flags in the back that we're taking to the protest in front of the embassy—so monks can burn them, I add helpfully—and yes, thank you, so that monks can burn them. We represent a shady consortium of Norwegian flag

manufacturers who want to profit off their government's involvement in our peace process.

—Can we be called Skuld and Crossbones?

—Yes, K allows.

We say goodbye to Bystander Uncle and K eases the Cortina onto the narrow bridge. The queue is moving, but very, very slowly. Somewhere far down the line at the other end of the bridge, people are slowly, grumpily reversing, making way, making room. We're still not at the climax of Act III, which will be the moment at which the frustration and dull resignation that they're feeling at this retrograde motion is finally overcome with the relief of the disaster-survivor (the worst has happened, and now there is nothing left to do but to live). When they reach that point, it is said, they will stick their heads out of their cars like dogs and speed backward, tongues hanging out in joy at the resolution. The war will be over, until tomorrow, and everybody can go home at last.

And the side that gets to move forward first, the winning side—winning is determined by whoever managed to get furthest past the centre of the bridge before the initial deadlock, and much of the fighting revolves around the definitions of where the centre of the bridge really is, or what “centre” even means, or the true nature of space and time, or the veracity of the competing secret histories that will explain it all—the winning side will speed forward in the ecstasy of unencumbered motion, in the unshakeable belief in progress. The future! Development! All that is good lies ahead, across the narrow bridge.

Metal scrapes both sides of the car. Sparks are instantly quenched in the rain.

—Well, that was enlightening, K says.

(Pause for applause.)

The studio audience applauds on cue, uncomprehendingly. It sounds like static, tinny and scratchy. The studio dimension lives in one of those extra spatial dimensions that are very small and rolled up very tight at right angles to length, breadth and width—in this case, one we call snidth, the imperial measure of how snide something is—and sound gets twisted coming out of it. Their laughter is sometimes appropriative and always overbearing. It sounds like distant, cacophonous birdsong, like a wetland morning.

—Did you believe him about the history of the bridge, I ask, —About the revolutionaries?

—He specifically said they weren't revolutionaries, K says. —And I do believe him. Why not?

—It violates R2E, I say, —It makes the history of the bridge too much like a metaphor for the war. A crime against humanity (I mean who makes a bridge with only one lane, anyway) punished with violence that is itself an injustice, and so on and so on into a cycle of retributive violence—

—And also unrelated opportunistic violence, K adds, —And semi-related associated violence, and structurally-linked institutional violence—

—And also all that, I say, —Until the bridge itself just disappears into the simile. But the problem isn't whether the bridge is real or a metaphor: obviously the bridge is real (I'm thinking, though I don't mention this part out loud, of bicycling under it as a boy: when the bridge, the actual and irreducible bridge, would even *as* a metaphor have had to be a metaphor for something else) and the war is so much more real than the bridge.

—Or the ceasefire, K suggests.

—Or the ceasefire, I say, —which might never become really-real. I think it makes more narrative sense (which is the only kind of sense history ever makes) that the attack was carried out by revolutionaries. It moves their motives out of our line of sight. So we've upheld R2E by avoiding the neat, misleading, ultimately meaningless explanation.

—What's R2E again, K says, and I can tell from his inflection that he doesn't mean it as a real question. The studio audience chuckles in appreciation.

—The refusal to explain, I say, —As a policy of discourse.

I didn't roll my window up again after talking to Bystander Uncle and the rain's coming in sideways. If nothing else, we've both learned one thing from the old man and have (without discussing it in any way, in a silent coordination invisible to the studio audience) decided not to care about getting wet.

—Let me guess, K says, dryly. —You won't explain what it means.

A roar of snide, crackling static. We wait it out, holding our expressions unmoving, our faces without windows, until it dies down again. I don't point out that I forgot myself just now and already explained what it meant, because now I know K isn't really listening. I don't blame him. Our relationship with the studio audience is complicated. Sometimes we want to be free of the pressure of their gaze, the need to always be performing, but at the same time we can't help but revel in the comfort of their acclamation. We scrape along accompanied by distant, inappropriate gusts of laughter.

The Froglover

Cynthia Ward

When the boats came in from the deep sea, Teacher sent us out of the schoolhouse early so the older boys could help with the catch. The little kids ran to the shore to play on the rocks. Gina and I were in fourth grade, too big to do that any more.

“Let’s go to my house,” I said. “Dad carved me a new doll.”

“I’m too old to play with dolls,” Gina said. “Anyway, my mother doesn’t want me playing with spicks.”

“I’m not a spick,” I said. “My mother doesn’t want me playing with froglovers!”

“Your mother’s jealous ‘cause we have a better house,” Gina said. “We’re not froglovers. Just my sister.”

“Mumma’s meeting the boat,” I said.

“Okay, I’ll come over for a little while,” Gina said.

We jumped from patch to patch of blacktop to avoid the mud of the road out of Frogtown. When my view wasn’t blocked by the corn, I could see the boats. I saw my dad’s boat. I could pick Dad and my older brothers out of his crew because their faces were darker than the others, but I couldn’t pick Mumma out of the people on the dock and shore. I saw three frogs, bright green heads above blue and gold uniforms, buyers from the frog city.

The fishermen’s houses were all outside of Frogtown. They all had nets drying on their unpainted silver-gray walls and fish drying on racks in the dooryards. They all stood far apart, separated by the pastures and crops. The high corn reminded me I’d seen red leaves in the green of the forest. We’d be getting out of school soon for the harvest. You picked peas and beans until your hands hurt, dug potatoes until your back screamed, but you couldn’t stop. I hated harvest-time.

Gina didn’t have to work in the fields any more. I hated her for that, even though she was my best friend.

Nobody was home except Gram Liz and the two babies sleeping in the cradle. And Graygram Sally

in her bed—she hadn't been out of bed since before I was born. Gram Liz sat near the cradle in the big room, rocking in front of the TV box. She had turned it on. Its glass front was a gray-white haze, and it made such a loud crackling hiss I was surprised the babies hadn't woken up. With Gram Liz in the big room, we couldn't play inside. Gina wouldn't want to.

Gram Liz glanced at the babies and saw us. "Katie!" She scowled. "It's a good thing your mumma ain't here to see who you brung home. I got to admit, I ain't happy about having a froglover in the house, either. The frogs took the world away from us." She gestured at the hissing TV box. "They took *everything* away from us."

"I thought the Emp and the Little Big Wars took TV away," I said. "*Then* the frogs came."

Gram Liz shook her head. "That school ain't worth nothing. Teaches what the frogs want us to know, and that ain't much. Katie, your Great-grandmother Sally wants to see you."

"I'll be right back," I told Gina.

My parents' house had five rooms plus a kitchen and a bathroom with a real flush toilet that worked if you emptied a bucket of water in it. Graygram Sally and Gram Liz had one room, my parents had one, and my older sisters shared one while my older brothers shared another. The little kids slept in the big room, where the TV box and the table and chairs were. Only our parents and grammies had beds. The babies had the cradle. The rest of us slept on cloth sacks stuffed with seaweed. I was the oldest in the big room, so I had to change the two littlest kids' diapers and rock them back to sleep at night. I wished I could move to the big girls' room. Mumma had another baby on the way.

My grammies' room was tiny, almost filled by the two narrow beds. The room was dark, and musty under a strong pee smell.

"Graygram?" I spoke loud. She was hard of hearing. "Graygram Sally? Are you awake?"

"Katie?" Her voice was so faint and cracked I could hardly hear it. She spoke funny, too, like the frogs did, only funny in a different way, but I didn't have trouble understanding her words like Mumma and Gram Liz did. "Katie, are you here?"

"Yes, Graygram Sally." Dad once said her name wasn't Sally, it was Consuelo, but few people could pronounce that name, so it turned into Sally. "Do you want me to open the windows?" I asked her. "The sun's out today."

She didn't say anything, so I pulled back a raggedy curtain. This room didn't face the sun, and Graygram could hardly see, but she blinked against the light. She was so tiny she hardly made a bump in

her quilt. Her face was as wrinkled and brown as an old apple. Her hair was white and thin, showing the scalp.

I leaned close so she could see me. “Do you want me to change you, Graygram?” The pee smell was really strong. I breathe through my mouth and hoped Gina couldn’t smell it.

Graygram didn’t seem to hear my question. She said, “I have something to give you, Katie.” She raised one arm, thin and brown as a stick; it looked as fragile as a dry leaf. She reached into the neck of her old, old, frilly nightgown and pulled out a leather string. She tried to raise her head, but it fell back against the pillow before she could get the string off. I raised her head, feeling her thin soft hair, and took off the string. Two plain gold rings clinked on the string. They looked like Mumma and Dad’s steel wedding bands.

“Katie,” Graygram said, “I want you to have these. They’re Danny’s and my wedding rings. My mother used to tell me Danny would never marry me. She said the American soldiers had been promising marriage to the young women of Guatemala since she was a little girl, but they always forgot their girlfriends when they went home. But Danny loved me. He married me as he promised, and he took me with him to his home in the North. When you are older, Katie, you will find a man to love as I loved Danny, and he will love you as Danny loved me. You must have these rings.”

I’d never heard this story before. It made me feel so happy and sad that I could hardly talk. “Thank you, Graygram. But you don’t have to give the rings to me now. You can give them to me the day I marry.”

“Katie, I am ninety-six years old,” Graygram said. “I will not see your wedding. Take the rings now. That is what I want.”

“Of course, Graygram,” I said. “Thank you.”

I held out my hand. As she put the rings in my palm, I started to choke up. She was giving me everything she had.

I’d never known my great-grandfather, or his son, my grandfather Robert. They died when my father was a little boy, killed by the bandits and pirates that attacked our town after the Little Big Wars, until the frogs came and stopped them.

As I hung the leather string around my neck, the rings slipped into my wool dress and lay against my chest. The gold was as cold as rocks from the winter ocean, even though the rings had been lying against Graygram’s skin.

“Graygram, do you need another quilt?”

"No, child," Graygram said.

But she needed to be changed.

When she was clean and dry, I kissed her and closed the curtain. I plugged the kitchen sink, poured water from the pitcher, and washed my hands. Gina stood by the kitchen door, staring into the big room with a disgusted look on her face.

"Those babies stink," she said. "Let's get out of here."

I checked their diapers. Both babies were dry. They smelled sweet. Mumma had bathed them before going to the dock.

"They don't stink," I told Gina.

"Do too," Gina said. "I smell baby poop. I'm going to my sister's house."

"Gina, you said you were going to spend the afternoon here!"

"No I didn't," Gina said. "Anyway, I don't want to any more. It stinks here. And your mother and grandmother hate me. 'Bye, Katie."

"Can I go with you? Please?"

"I thought you hated my sister," Gina said. "And your mother doesn't want you near Laurie. Or anybody in my family."

"I don't hate Laurie," I said. I hardly even knew her. She used to go to the schoolhouse, but she was so much older, she never spent any time with us.

"My mother doesn't need to know I saw Laurie," I said.

"Okay," Gina said. "Come along."

Gram Liz didn't see us leave. She rocked and stared at the white haze on the howling hissing TV box.

We walked to Frogtown. There were no crops or cows or goats or sheep here, and the houses stood close together. They were all painted, white and black and gray and blue and yellow and red and pink. Their small yards were separated from each other by wood fences, or bushes cut to look like walls. The street had more blacktop on it than the country road, but it was just as deserted, even though the men of Frogtown didn't go to sea. Gina lived here now, in one of these painted houses.

"What do your parents do in the frog city?" I asked.

"Clean frogs' houses," Gina said.

I hated house-cleaning. I couldn't imagine cleaning frog houses, then returning home and having to clean there too.

The frog city stood on the far side of Frogtown, six glass towers rising to the clouds. No human could get in the frog city without a special badge. My big brother said a force field surrounded the city, an invisible wall, too smooth to climb, that went up far higher than anyone could jump. A wall of hard air.

Among the tall glass towers I saw a much shorter tower, made all of gold, with a pointed tip. It hadn't been there yesterday. Even frogs couldn't raise a building overnight.

"What's that gold tower?" I asked.

"A spaceship," Gina said.

I stared. It was creepy to be reminded that the frogs weren't from Earth.

A lot of frogs lived outside the glass towers and force field, in the painted houses. I was scared to see a frog up close, but at the same time I was even more eager to see one after seeing the spaceship. But I only saw a frog car, a silver beetle flying down the road without wings. It didn't look anything like the rusted old cars that lay in the streets, or the colorful cars in the books at the schoolhouse, or my little brothers' old toy cars. It passed us quicker than the fastest horse, and the only noise it made was a quiet hum.

"My sister lives here," Gina said, and led me up on the wide porch of a slate-colored two-story house. My heart beat faster than a galloping horse's hooves. The door had no knob, just a slot. Gina reached into her pretty yellow dress and pulled up a leather string. I put my hand on my breast, feeling my great-grandmother and great-grandfather's rings.

Gina's leather necklace had a plastic card, a frog key. She put it in the slot. The door clicked and swung in, opening to an empty hall with shining lightbulbs and stairs going up. Gina stepped inside. She turned around. "Aren't you coming in? You said you wanted to visit my sister."

"I do," I said, even though I didn't want to go in a froglover's house.

Froglovers were traitors. Mumma, Gram Liz, and Dad and all the other fishermen said so. Mumma even called Gina's sister a bad word once. "I don't want to see Gina in this house. Her sister is a frogfucker. The worst kind of traitor!" Gina knew my mother didn't approve of what her parents and sister did, but I never told Gina my mother said *that*.

"Come in or go home," Gina said.

I stepped in the house. Gina shut the door with a loud, echoing boom that made me want to grab the knob on the inside and see if it turned, see if I was trapped inside.

"My sister lives upstairs," Gina said, and ran up the stairs, her footsteps echoing in the empty hall.

I looked at all the closed white doors. They looked like normal doors, but they had keyslots instead

of keyholes. My heart pounded harder. I didn't want to be down here alone. I ran up after Gina.

In a bare hallway lit by lots of bulbs, Gina knocked on one of several closed doors. The door didn't open. Gina knocked again, then used her plastic key. The door swung open. She took my hand and led me inside.

No one was in the room. It was the size of the biggest room in my house, and held a bed wider than my parents' bed. Its headboard and footboard were made of metal instead of wood. The mattress wasn't covered with quilts made from worn-out old clothes. It was covered with white sheets and a huge white fur, bigger than any cow or deer hide, and streaked with thin blood-red stripes. The fur and sheets shone like fresh snow in the sunlight pouring through an unbroken glass window. I couldn't believe how white they were; I couldn't keep from touching the bed. The fur was as soft as a kitten's, and the sheets were just as soft, and smooth and sleek.

Gina rubbed the white cloth. "It's *ganiss*."

She yanked back the sheets. I didn't see a mattress. I saw floorboards. The sheets and pillows floated three feet above the floor.

"The bed's made of air." She restored the sheets and patted them. "Have a seat."

I sat down carefully, afraid the sheets would collapse and I'd fall and look stupid, but the bed of air just sank down a bit under my butt, like my parents' mattress. But the air mattress wasn't lumpy or musty like their mattress. The fur or the *ganiss* had a faint smell that reminded me of swamp plants, but I stayed on the bed, pressing against the cloth and feeling the air, the force field, press against my palm.

On a night-table stood seven tiny frog ghosts. I screamed.

"Did *this* scare you?" Gina asked scornfully, leaning past me to point at the ghosts.

I nodded.

"That's just a holo, dummy." She passed her hand through the three-inch ghosts. They reformed instantly.

"A holo's nothing to be scared of," she said. "It's like an old photo. It's a holo of his family."

They still looked like ghosts. I looked away, and saw a huge picture on the wall across from the bed. It covered most of the wall, but was sharper than the best preserved photo I'd ever seen. It showed a landscape that looked nothing like the rocky shore or blue-gray ocean or the fields or pastures or forest outside of town. Even the sky was different: pale green, with clouds of a lighter green, like clouds from a dream. They were high above a forest with leaves redder than the forest got in the fall, the bright red of

human blood. I realized the clouds were moving. They exposed two fat blue suns.

I remembered what Gram had told me about the time before the Emp, and pointed at the moving picture. "That's a TV!"

"Yes!" Gina waved a small black plastic box covered with buttons. She pressed one. Sound burst out of the picture, filling the room with whistles and howls that didn't sound anything like the cries of birds or coyotes or wildcats.

"It's not Earth," I whispered.

Gina pushed another button. The picture changed. It showed a bunch of frogs facing a group of humans with wild faces and wild beards, and pistols like the ones my dad and the other captains wore under their jackets, and rifles like the ones hidden on the fishing-boats.

"Gina, what happened to the picture?"

"I changed it," Gina said.

I jumped as the wild-looking men shot their guns with painfully loud booms. The wild men couldn't hurt me, I told myself; they were just a TV picture. And they hadn't been shooting at me, anyway. But none of the frogs they were shooting at fell. The force field that stopped the men's bullets didn't stop the light-beams from the frogs' weird glass rifles. The wild men screamed and fell with tiny black holes in their bodies.

"Are there any more pictures?" I asked eagerly.

"Hundreds of pictures that change all the time," Gina said, and pressed the button as fast as she could. Image followed image, dizzyingly fast; images of frogs holding objects I didn't recognize, a frog head with its big mouth open wide, a swirling pattern of jagged golds and blues, a group of uniformed frogs standing in front of a spaceship, a giant hairless cat with green skin and six legs leaping on a six-legged black deer with green stripes, a group of frogs fighting giant gray spiders, two frogs punching each other, two frogs holding each other so close I couldn't find out what a female frog looked like. The sounds all ran together, and as the images changed faster and faster, the sounds became a hissing howl like the noise of Gram's TV box.

The drifting green clouds and two blue suns came back, and Gina threw down the button-box.

"Why'd you stop?" I said angrily. I wanted to see more moving pictures.

"I've got something *better* to show you, dummy." Gina held out a tiny, pale brown square. "But eat this first!"

It didn't look at all appetizing, but its faint, unfamiliar smell was pleasant. I put it in my mouth and bit down. It melted over my tongue and flavor filled my mouth, so strong and sweet it made my mouth hurt. I wanted the flavor to last, but I chewed fast, swallowing, gulping.

"My sister doesn't need to wait for spring and maple sugar-making time to have a sweet," Gina said. "He brings her *shona* all the time."

"Is there more?" I said. I had to have more.

"Yes, but you can't have it *now*!"

Gina jumped off the bed and turned the knob of a white-painted wood door. The closet held some frog clothes, bright blue and gold uniforms, bright red and purple and orange shirts and pants, but mostly it held women's clothing that didn't look like anything I'd seen outside of an ancient magazine Gina had. I ran my hand over the dresses. They were so soft they made my hands feel disgustingly rough, but I couldn't stop touching them.

Gina took off her dress and put on a beautiful dress of rose-pink *ganiss*. It would be very short on her sister, but on Gina it almost touched the floor.

"Come on, Katie," she said. "Dress up!"

I couldn't imagine wearing her sister's clothes, but she pulled another dress out of the closet and glared at me, so I took off my dress and put on her sister's. It brushed the floor, but I didn't care. It was the same pale green as the clouds in the moving picture, and it was as light as a cloud must be. I loved its feel, nothing at all like itchy heavy wool; the *ganiss* was so soft and cool I never wanted it to leave my skin.

Gina put on a pair of slim red shoes with high heels, and I took off my shoes, ugly old cowhide shoes handed down from my older sisters, and stepped into a pair of pale green shoes that matched the dress.

The shoes flopped and clonked on the floorboards as Gina led me to a white table covered with little bottles, a brush and comb, a large button-box, and something that looked like a flat TV box. In front of the glass-faced box, a white mask lay face-up. It was shaped like a woman's face. A perfect woman's face.

Gina pressed a button, and the blank gray glass of the TV box turned into a mirror. She opened a drawer and pulled out a box of fancy gold and silver jewelry set with rubies and emeralds and sapphires and gems I didn't know the names of. They were the most beautiful things I'd ever seen.

Gina put some jewelry around her neck and wrists and fingers. Then she put several heavy necklaces and bracelets and rings on me. I shivered.

Then she raised the mask, and in its blank glass eyes I saw my own face.

“Close your eyes and *keep* them closed until I tell you to open them,” Gina said.

I closed my eyes. A moment later, the inside of the mask pressed against my face. A cool squishy material covered my face, blocking my nose and mouth. I couldn’t breathe. I started to pull my head back, and the material stopped pushing against my face. I felt something brushing my skin and lips and eyelids. It tickled me, and made me want to push the mask away. But just when I couldn’t stand it anymore, Gina lowered the mask. I reached up to rub my face.

“Don’t touch your face!” Gina said. “Look in the mirror.”

I opened my eyes. In the mirror of the TV box, my face was white as snow, my eyelids blue-black, my lips and cheeks redder than the apple on the “A” page of the alphabet book. I looked like the ladies in Gina’s old magazine. I touched the necklaces, then reached up to touch my face and stopped myself. I looked gorgeous.

“The mask is part of my sister’s frog machine,” Gina said, touching the flat box.

Gina studied herself in the mirror, and picked up her sister’s brush and ran it through her hair. Looking at her beautiful face, looking at mine, I remembered words from the old magazine: powder, rouge, lipstick, eye-shadow. Magic words.

Gina lay on the bed and picked up a tin box I hadn’t noticed before.

“Now we can eat the *shona*,” she said.

She popped a sweet in her mouth, then grabbed the button-box and changed the moving pictures as fast as her finger could move.

I lay beside her and put a sweet between my smeary-feeling lips, taking care not to get lipstick on the candy. I couldn’t believe anything could taste as delicious as *shona*. Nothing could feel as soft as the *ganiss* cloth of these sheets and dresses. Nothing could be as wonderful as the moving pictures.

“I’m going to be a frogfucker,” I whispered.

The hall door opened to reveal a beautiful woman with a made-up face and a *ganiss* dress. Beside her stood a frog in the blue and gold frog-soldier uniform. His face was green and flat and had no nose, just two slits for nostrils. His round eyes were gold, all gold, except for the pupils, which were black as frozen mud. His mouth was a big, lipless slash. He didn’t have a hair on that shiny green head, not even an eyelash. He was the handsomest man I’d ever seen.

“Gina, what the hell are you doing here?” Gina’s sister demanded. “They’re eating my candy,” she screamed. “You bitches get off my bed and out of my clothes!”

“Laurie,” said the frog, “you are being ungracious to your guests, and one is your kin.” His voice had a flat, almost metallic sound, under a sort of burble. He sounded like a stream.

“But that’s candy you gave *me*,” Laurie said.

“Laurie, I will buy you more *shona*, as I always do,” the green man said. “We share with our guests.”

When I went home, it was after dark. I’d washed off the make-up in the frog’s bathroom sink, with hot water that came right out of the faucet. I scrubbed and scrubbed with a mild, snow-white soap, and looked in the bathroom mirror to make sure I got rid of every trace of make-up. I couldn’t get rid of the thought that I’d missed something. If Mumma saw a speck, she’d know where I’d been, and spank me. Dad might even belt me, though he never hit his kids like some fishermen did.

When I saw my parents’ house, I remembered the rings Graygram gave me. I took them out and looked at them in the light pouring through the windowpanes that weren’t broken and covered with wood. My parents must have lit every candle they’d made, and turned on every electric light.

In the light, the rings were plain and covered with scratches. I remembered the fancy gold and silver rings covered with emeralds and rubies and sapphires. How had I ever thought Graygram’s rings were pretty? I pulled off the crude leather necklace and threw the rings as far away as I could.

I went in the house and Mumma fell on me. Her face was gray and twisted with emotion, and her big belly made her weight so great I could hardly stand up. I knew she would see a streak of make-up and slap me.

“Oh, Katie!” Mumma said in a broken-up voice. “Your Great-grandmother Sally died.”

I pushed away from her and ran outside. I looked up at the stars and they blurred as my eyes filled with tears. I didn’t want Graygram Sally to die. She never tried to tell me who I could have for friends, the way Mumma and Dad and Gram Liz always did. She loved me and I loved her.

But I wasn’t sorry I threw those ugly rings away. I’d have better when I got older. Everything would be better when I was a frogfucker.

Quinta Essentia

Bradley P. Beaulieu

On the day they finally came, Sean Brannon tossed and turned in his bed, his ligature exoskeleton whirring while assisting his movements. The sound of the ligature was nearly, though not quite, masking the childlike whine that escaped him with each turn of his broken body. He rolled and lay in a fetal position, and found Therese an arm's length away—a measure of space that in their early days had always seemed so tenderly close but now felt unbridgeable. He knew she felt his movements, heard every minute manifestation of his pain no matter how hard he tried to mask it, but she tried to remain asleep while he in turn tried to remain as quiet as he could manage.

Dawn was still a distant dream, but Sean knew he would never get back to sleep now, so he threw off his thin blanket and pivoted himself up, joints howling from the attention the levering of a ninety-pound frame to a semi-upright position required. Placing hands on knees and gritting his teeth, he pushed himself up to a trembling stand. It was worse than normal today. The humidity—he could feel it in the air already—and something else, something more arcane than precipitation.

He was sweating by the time he managed to coax his body into a fully upright position.

“Come back to bed,” Therese said, reaching over the ruffled bedcovers with an arm that was well shaped. A *woman* that was well shaped. A woman that had helped him every day since this endless nightmare had begun.

“Go back to sleep,” Sean said.

She woke more fully then, raised herself up, arms and shoulders angling unnaturally as she propped herself on one elbow. By the light of gas lamps filtering in through the nearby window, she watched him with pity-filled eyes. This was the worst time of day for both of them. It reminded them how frail he was, and he suspected it reminded Therese how frail *she* was—how frail they all were in light of the ways the world had changed—and Therese was a woman who had never liked being reminded of her own mortality. She seemed ready to argue with him, to coax him back to bed, but then she relented and lay back, turning over with the leaden movements of the deeply fatigued, and fell back to sleep.

As she lay there, snoring softly, Sean forced the suit to work his body. As much as he'd learned to ignore pain, he couldn't stand so much of it at once. He started in increments: toes, then feet, then calves and thighs. Sweat gathered on his brow as he continued with his back and stomach and chest and back. Then neck and jaw and mouth. His arms and hands were the least painful, but he was careful to move them properly—flexing, then releasing, flexing and releasing—lest he strain something before he'd warmed up.

Every gradient in movement pained him, as if his muscles were being ripped apart. Even his bones felt like millstones, grinding themselves into dust. But he worked through it all. He couldn't give in to the pain, not even a little. Do that, and he *would* return to bed. He would lie there, crying as the pain consumed him, and Therese would be forced to take him to the University hospital and *they'd* work his muscles for him until he'd gotten past it. If that happened, it would be infinitely worse than what he was feeling now.

By the time he pulled his clothes on—clothes made overly large to fit his ligature—the sun was burning blue along the eastern horizon, across the River Wear, and in the distance, the towering haulms the Jovians had seeded twelve years before waved gently in the wind. Jovians, they'd been called, even though no one truly believed the haulms had come from Jupiter.

Like candles on a grand cake, the tips of the haulms were lit by brilliant orange from the sun. The rest of their length was dark, like mottled ochre earth. Bits of flake fell away from each, twinkling in the light as they were blown by the wind. The skin of the haulms had been doing this ever since they'd emerged from the earth. The flake was like the bark of the eucalyptus, shedding as it grew, but the haulms were so large now that if the wind came from the north, the streets of Durham would be covered with layer upon layer of it—thin, chalky flakes building until the plows came to clear the streets or the rain dissolved it into a thick yellow slurry that eventually washed away.

A hundred men, hands clasped, would be needed to circle the base of one of the haulms. Their roots dug deep, some said as deep below the earth as they towered above. Sean doubted this, though. Some few scientists from the British Society of Engineers had commissioned a dig to determine for certain, but gave up after excavating five hundred feet down. They'd run calculations based on how quickly the roots had narrowed, and determined they could go no further than half a mile down.

No one knew why the Jovians had sent the stalks. No person or government had been contacted in any way. The haulms had simply started to grow—all over the Earth—at an unimaginable rate, reaching up and up until they towered over every territory in the world where vegetation grew.

Sean reached the rail yard just as the sun's first rays were gleaming against the horizon in the east.

He headed to a red train that in an hour would carry dozens of workers from Durham up to the fluorite mines, one of the city's major exports, especially since the discovery of quinta essentia some thirty years ago. Standing next to it on a second set of rails was a new train, or more accurately a train with a new power plant, fueled by an ingenious mix of quinta incendia, terra, and unda. It was shiny and bright and green with red trim, a recent prototype granted to the mining company from Morgan College—the University's newest college dedicated to the study of elemental science. The gift made sense. The college, after all, benefited greatly from the fluorite mines. It was the primary doping agent in the lenses they made, the ones that focused the five elements into viable and useful applications.

Sean went to the first of the coal cars sitting next to the steam train and, after rolling back the tarpaulin covering the coal, gritted his teeth and began shoveling the coal into the tender. Pain ran through his arms and legs and back, but the truth of it was it felt good, no matter how much pain there was, for it was loosening his muscles even further, the first of many steps in a long and careful process of physical exertion that would, if he was careful, carry him through the entire day. Even his ligature—the exoskeleton drilled into every major bone used in typical human locomotion—whirred more enthusiastically, providing more than half the effort needed.

"Ah, now," came a voice from behind Sean, "please, Mister Brannon, won't you let me help?"

Sean turned and found Thomison, the old rail yard foreman, standing some paces away wearing his characteristic engineer's cap and blue denim overalls.

"Good morning, Thomison."

"I'd say the same to you," Thomison said, wiping his hands on a greasy rag, "but I can see it's going poorly enough already."

"I told you, the activity does me good."

"As you say, but you also said it would make you healthier. Just looking at you, begging your pardon, sir, but it's been seven weeks and you're looking worse'n ever."

"Why, thank you, Thomison. You're looking well yourself."

Thomison bowed his head apologetically. "My father told me never to mince words, not when it might do someone some good. I can't have the men late for work. I'll be speaking to the Master Hunt later today. I think it might be best if you went to see the doctor, spent a bit of time at home."

"Thomison, I've seen the doctor. I can assure you, there's no need for it."

Thomison looked as though he was going to argue with Sean, but just then his eyes went wide, his

mouth fell open, and he pulled his cap off and clutched it to his chest.

Sean turned. Stared up at the thin layer of clouds high above. They were parting, folding backward as something with a dark, mottled surface drove through from above. It was huge. Massive. Larger than a bloody castle and shaped like an island ripped up from the sea. Its smooth top warred with a ragged underside and the strange tendrils hanging down from below. It floated down, down, down toward Durham, and behind it came more. One, then two, then three, then a dozen.

They lowered themselves, each heading slowly but inexorably toward one of the haulms.

Around him, the city was coming alive, more and more coming out from their homes or stepping away from the day's early work and staring up at the wonder of it all. Screams came. Children wailed for their mothers. A gun rang out, and then another, rifles and pistols firing ineffectually at this new menace above them. But the Jovians cared for them not at all. To them, the humans running about on the ground below were little more than a host of teeming insects, a minor annoyance at best.

The first of the lowering shapes was nearing its chosen haulm. Thin tendrils reached up from the massive stalk. More reached down from the underside of the pod. And they intertwined, multiplying, strengthening, drawing one another closer until the massive object had secured itself in place.

"What's it mean, Mister Brannon?" Thomison asked breathlessly.

"I've no idea," Sean replied, "but I can't imagine it bodes well, can you?"

"No, sir, I cannot."

Δ

Several months after the Jovians arrived, the steady rain of flakes dwindled and then stopped altogether, but something new soon took its place: a fecund smell wholly alien to the forests and bogs and marshes Sean had ever been to—a byproduct, the botanists said, of the pods' tendrils attaching to the tops of the haulms. Sean thought it a poor sign. It meant that the haulms had stopped growing, that the pods were nearing maturity, and that the next steps in whatever plans the Jovians had for Earth were nearing.

Or so it seemed to him.

Winter passed and spring arrived. The pods had been catalogued all over Earth, wherever the haulms grew. In point of fact, as far as anyone knew not a single haulm had been left untethered, suggesting an intelligence that couldn't be explained away as simple extraterrestrial plant life. Fear of the pods and the hatred they'd initially generated were starting to soften. The pods simply were—a new feature of the

landscape all over the world—and people were starting to say it was a *good* thing. What they saw floating over their cities and countrysides was likely the worst of it, they said. The Jovians had come from wherever they'd come, they'd planted their seeds, and they'd grown. Simple as that. Like petunias. And one day, if the science community was right, they'd find something useful from these pods, something revolutionary. They'd come from another world, after all. Who since the days of Ptolemy hadn't dreamed of this very thing?

Twelve months after the arrival of the pods, there was a breakthrough announcement from the team of botanists who'd convened in Durham. They had been taking weekly samples of the pods using the University's science platforms—the undersides of which had been infused with *quinta aeris*—and now claimed the husks were slowly hardening, perhaps in preparation for some transformational event. A regrowth, a seeding. No one knew for certain, but it seemed to make sense. It was a natural organism, and so of course would have some way of reproducing itself.

Sean was pounding out a bar of iron, red and fresh from the forge, a new job after Thomison, the rail yard foreman, had seen to it that Sean had been shown the street. The forge suited him just fine. It let him work his body all he wanted—a thing it needed even more in the colder months—and the owner was rarely around to hear Sean's groans, which, even Sean had to admit, was a difficult thing to deal with.

Sean was just finishing the forming of the bar he was working on when he heard footsteps, saw the silhouette of a man in a brown suit standing in the entrance to the forge. He blinked against the lowering sun, trying to see who it was.

And then, like a dark dream suddenly returning in the light of day, he recognized him.

"What the bloody hell are you doing here, David?"

David Lock, a scientist Sean had worked with years ago, stepped into the forge. "I've come because we need to talk, Sean."

"Bollocks, we need to talk..." Despite himself, his atrophied muscles began to shake. The ligature was as silent a piece of machinery as there was, but still it betrayed him, its sensors picking up his movements and whirring in response. "I want you to turn around, right now, and leave."

Instead, David took a step forward. "I didn't make this journey lightly, Sean. I've come bearing news. Critical news. And you're one of the few people in the world who would have any hope of understanding it."

"What, some mad new scheme to restore your chair at the University?"

"Nothing of the sort." David doffed his bowler and gripped its rim tightly. "It's the Jovians, Sean. I think

I know why they've come."

Δ

David led Sean to an abandoned shoe factory that had shut its doors a decade ago, but when David pulled the heavy door aside, rollers squealing in protest, Sean found a science lab within it—a proper, well-equipped, elemental science lab. It smelled of leather, as if nothing save burning the warehouse to the ground would ever rid the place of it, but warring with this, and the other echoes of its sweatshop past, were four precise rows of workbenches with dozens of individual stations, glass beakers and blue flames and fluorite lenses all about, nearly an exact replica of the lab Sean had helped David to run over a dozen years ago.

Sean found he could go no further than a few steps inside the doorway, which made David stop and stare.

"Are you all right?" he asked.

Memories of their shared past were flooding over him. "It's like nothing's changed..."

David looked chagrined at that. "I work no differently than I did years ago. It makes no sense to alter the configuration." He motioned to the nearest bench. "Please, it's right here."

Still staring in wonder, Sean followed, the sound of his footsteps lost in the vast darkness of the factory's hollow interior. David motioned to a set of three microscopes, indicating that Sean should look into the first. Sean reluctantly leaned down to the leftmost, putting one eye to the black eyepiece. The view showed a tight pattern of tubular green cells backlit by a disk of quinta incendia. "These look like pollen tubes."

"They are," David said. "Can you guess what species they came from?"

Sean stood, his ligature whirring loudly in the relative silence of the place. "I'm not your student anymore. Keep your questions to yourself and tell me why you've brought me here."

David winced, but recovered quickly. "Do you know where I've been for the past thirty-eight months, Sean?"

"I've no earthly idea."

"I've been in the Amazon, studying the plant life there. Did you know there's a higher concentration of haulms in the Amazon basin?"

"I'd heard something about it, yes." In fact, Sean had been reading many of the journals coming out of the University. The pain he experienced day in and day out—not to mention the efforts he went through to keep it in check—prevented him from pursuing the field of botany as he once had, but his love for it was as

strong as ever, so he read when he could, keeping up on the field as much as his quiet times allowed him.

“What you’re seeing are the pollen tubes of *Victoria amazonica*, the water lily. They’re normal, healthy, rapid-growth cells, yes? Now take a look at the second scope.”

“David...”

“Please, Sean. Just take a look.”

The urge in Sean to deny David anything he was looking for was strong, but there was also a fire within him, a strong curiosity for knowledge, especially where it related to the Jovians. He stepped up to the second microscope and bent down, the muscles along his shoulders, spine, and hips aching dully from the attention. Within he saw a similar slide of cells. They were shaped the same, but their color was wrong. They were damaged and crumbling, though from what, Sean had no idea.

“What are these?” Sean said as he studied them carefully.

“Those are the same cells exposed to the influence of the haulms’ roots.”

Sean stood. “Their *roots*?”

David nodded. “At the center of the Amazon basin, we noticed that many of the plants near the haulms looked weakened where they hadn’t been only a month or two before. We took careful samples of dozens of different varieties, studying their growth—or in this case, their *decay*. In the middle of the rain forest, one of the most fertile places in the world, Sean, we found that these plants were dying.”

“There might be any number of reasons for that.”

“Indeed there might be, but we’d been studying that area for nearly two years already. We know its ecosystem intimately, and there was no reason for them to decay in the manner we saw. Rain was plentiful, as always. The nutrient levels in the soil were all within acceptable ranges. We found no traces of toxins.” David stepped up to the third microscope. “But what we *did* note was that the phenomenon started a mere few weeks after the arrival of the pods, the rough timeframe we estimate it took the pods to completely fuse with the haulms.”

“You’re suggesting the pods themselves had something to do with this.”

“I am.”

Sean pictured the haulms spread high above the basin, the ponderous pods lowering and attaching. Just how conscious were these inscrutable beings? To date they’d exhibited no form of communication—either with one another or with humanity—that earthly science might detect. “Perhaps it’s a leaching of the soil near the haulms.”

David nodded like a professor to his prized student. “In the early weeks of our detecting the phenomenon, the withering was stronger near the base of the haulms, but since then, the rate of decay in the more remote areas has been strengthening, and now, since that equalization has occurred, the rate of decay has been steadily increasing.”

Sean’s mind was racing. “The roots... They’re forming a colony.”

David’s head jerked back. “Very good... It took us a long while to confirm those very suspicions, but we now believe it to be true. The pods have created a vast network beneath the Amazon forest and are starting to bleed the life from it.”

“Wait a tick. *Bleed*? Some undiscovered Jovian byproduct causing decay is one thing, but you’re implying *intent*.”

“Not intent, exactly. I’ve no idea if there’s true intelligence—or anything we would recognize as intelligence—within those pods, but the beings that have arrived on our planet have to sustain themselves somehow. It’s nature’s most basic law.”

“Yes, but to suggest that they’re bleeding us seems like a bit of a stretch, doesn’t it?”

In answer to this, David stepped up to the third microscope and motioned to it.

Sean stared at it, a feeling of dread blooming within him. He stepped closer, leaned down, and stared into the eyepiece, the aches in his body now all but forgotten. Within he saw a similar slide of pollen tubes, but in the center was a very different cluster of cells. These were unlike anything Sean had ever seen. They were oddly shaped, with a strange ochre color and spicules reaching out from the walls of each cell. This microscope, unlike the other two, clearly had a quinta essentia filter in the lens arrangement. Sean could tell from the bright chromatic aberrations present, in the interior of the cells especially. It was one of David’s greatest contributions to the world of science, made and shared freely twenty years ago, well before Sean had started working with him. But this lens was very different than the ones Sean was familiar with. When he’d worked with David fifteen years ago, they’d been forced to capture images on daguerreotype plates, a process that—depending on how busy the University’s development labs were—took a day or two from exposure to viewable image.

This was an incredible breakthrough. The lens allowed him to see the fifth element itself with the *naked eye* as it moved through the aether.

David had proven without a doubt—shortly after the creation of lenses like the one being used here—not merely that quinta essentia could be viewed and measured, but that it pooled within all living things.

It did, in fact, run throughout the entire universe, but where there was life, quinta essentia thrived. No one knew if it was created or if—the amount of quinta essentia being constant—it was merely drawn *toward* life, but experiment after experiment proved that life of any kind would accrete more of the fifth element as it grew.

And here, for the first time known to man, was one form of life drawing quinta essentia from another. The study of the elements was still a relatively new science, but nothing like this had ever been seen before. It had never even been considered.

“This means that,” Sean began. “This means... Does it happen to *all* life? Animals? Insects? Sea life?”

David nodded soberly. “Lower life forms—*less complex* life forms—are apparently more susceptible than animals and humans. Bacterial life in the Amazon is being decimated. We have more evidence that worms and other invertebrates are weakening, and that soon they’ll be dying in greater and greater numbers. And after that, it will start to affect *us*.” He paused for effect. “If it hasn’t already...”

“Why the Amazon?”

“Because life there is so vital. If the Jovians can sense the fifth element, then it stands to reason the haulms would have been drawn there.”

Sean shook his head. This was all so much to digest. “You’re talking about complete destruction, the loss of all life on Earth.”

“I am. It’s coming, Sean, and sooner than we know.”

“Then we go to the Royal Society. We tell them of your findings.”

“I would, but my history with them, Sean... After what happened with the two of us, they wouldn’t trust anything I offered to them.” Sean opened his mouth to object, but David raised his hand and talked over him. “They’d open up a commission. They’d study the phenomenon.”

“As is proper.”

“Under normal circumstances I’d agree with you, but you know what will happen. They’ll examine every single thing I’ve done. They’ll insist on an expedition of their own making be sent to South America. They’ll demand they be allowed to make their own fluorite lenses, and none of them can make the kind I have here. They’re years behind me. All of them. But that wouldn’t stop them from demanding to know *how* they’re made, to know the *process*. They’d make their own, and they’d test *those*. And even then, even if all their findings were to corroborate what you and I already know to be true, there would be some that would claim that the potential effects aren’t as serious as we imagine, that the pods may, in fact, be

benevolent, that they're transforming the world for the better."

"We could disprove that easily enough."

"Yes, given time. But what we're talking about is *years* of effort. I fear we have only months to do something about this, perhaps only weeks."

"Then what are you suggesting?"

"There may be a way to reach the pods, to speak to them on another level."

Sean shook his head, completely confused. "How can anyone *speak* to the pods? We've tried everything."

David frowned. "We've hardly scratched the surface. There could be any number of ways to communicate with them."

"Which would take years on its own."

"That would be true if we didn't already have clues." David seemed to gather himself. "Our experiment, Sean. When we—when *you*—touched that basic plane of existence, I believe we were completely successful in our goals."

"*Successful?*" Sean shook his arms, his muscles aching from the effort now that he'd been relatively idle for so long. "I was *ruined*, David! My life was ruined! How can you call that successful?"

"Whatever might have happened to you—and know that I will regret that to my dying day—you cannot deny that you were able to submerge yourself in *quinta essentia*. For a time, as our models predicted, you *were quinta essentia*."

Understanding began to dawn on Sean. "You want me to do it again..."

"There's no one else who can."

"Then *you* do it."

His face turned melancholy at this. "I wish I could. But I can't. Not yet, in any case. I have to take measurements. I have to refine the process."

"Then find someone else to volunteer for your bloody mad schemes!"

"I can't do that, either. For all we know, there's something specific about you, your makeup, that allowed you to complete the transition."

Sean stepped up to David until they were almost chest-to-chest. "Do you have any idea the sort of life I've had since that day?"

"I can only imagine, Sean, and I'm—"

Sean poked him in the chest. "Truly sorry... Yes, I've heard it before. There hasn't been a single day, not

even after the Royal Society built this damned ligature for me, that I haven't thought about killing myself. The pain is *constant*, running through every part of me like fire I can never rid myself of, not truly. You can't know how that scratches away at the mind. It grates constantly, tearing me down until I'm raw from it! Maddened!"

David tried to speak again, but Sean shoved him backward so hard that he fell with a satisfying crash and skidded along the well-worn floorboards.

"You said all would be well, and then the experiment failed. I could have swallowed that. I might have gone on with something approaching a clear conscience, but you *abandoned* me! You claimed I'd done it on my own, that I'd *stolen* your research to claim the glory of being the first to touch quinta essentia!"

David looked up at him from the floor, his eyes, his face, filled with shame. It was unlike anything Sean had seen, even in the aftermath of their failed experiment. "Why didn't you give me up, Sean?"

Sean tightened his hands into fists until they shook from it. "Because you were *brilliant*! You *are* brilliant. You have the kind of mind that comes along once a century. Once a *millennium*. You were going to do so much. So very much. Who was I to deny that to humanity? Who was I to claim that you couldn't continue your work?"

David shrugged, pushing his spectacles back into place. "They found out anyway."

They had. Of course they had. David had been stripped of rank and all the credentials granted by the University. Sean had been working toward his degree, using the money David could spare to pay him, hoping to earn his degree, become a Doctor Elementalis like David, but that had all changed after the accident. Afterwards, he could worry only about his body, about keeping it alive until the doctors from the Royal Society came up with something, anything, to help him, and even then, he would have a long way to go to repair the damage he and David had caused to his career. No matter that they'd eventually found David guilty of gross negligence in the pursuit of science. They hadn't absolved Sean from his part in it.

After standing and adjusting his shirt, David stared Sean in the eye. "This is the world we're talking about here, Sean. Not you and me. Not the Society. But everyone. Life on Earth."

Sean felt consumed. He felt betrayed all over again. "I could die, David. Or are you going to give me assurances again?"

"No, you're all too right. You could die, Sean. And there's more. In a way, I believe the two of us are responsible for this entire series of events."

"*Responsible*?" Sean felt confused. Angry. He wanted to run. He wanted to use his enhanced muscles to

punish David for what he'd done, make him feel what *he* felt every day.

"I'm surprised you haven't pieced it together yet. Our experiment. Fifteen years ago, we touched the very fabric of quinta essentia." His eyes seemed to bore into Sean's. "A mere two years before the haulms arrived."

"Two years," Sean said, ready to argue, but his mind was already racing through the calculations. Theories abounded about how quickly one might travel through space using elemental drives, but David himself—shortly before he'd been discredited—had put forth a new theory: a way to travel by distorting and drawing upon the warp and woof of quinta essentia. According to David's calculation, two years and ten days, roughly, was by a strange twist of probability the time it would take to travel from one world to nearly any other. Quinta essentia's pull, converse to popular opinion in the science community, was stronger as the distance increased, which led to a tethering effect that might allow a starship—or an extraterrestrial being—to draw itself from one planet in the universe to another.

He thought back from the date they'd run the experiment to the first recorded sighting of the haulms. Two years and seventeen days. A mere six days off from David's calculation. How could he have missed it?

He knew why, of course. He had still been in the thick of his rehabilitation then. The University had been furious, but many were concerned about their liability, so to make things look as though the University were being magnanimous, and to further a long-running experiment that was just readying for human test trials, they offered Sean a chance to receive their first set of human ligature. He'd accepted, for it meant a chance at life—*some* sort of life—however painful it might be. While he'd been recuperating in the hospital, he'd hardly seen a single haulm—a few from the small window of his room, a few more from the place he was forced to exercise his muscles with the newly installed ligature, so the arrival of the Jovians, and whatever relationship they might have had to his experiment simply hadn't been on his mind.

But now the link was undeniable. Six days was certainly a reasonable amount of time for the Jovians to mobilize and launch the haulm seeds toward Earth. The Jovians were parasites, then. Creatures poised like spiders on a web, waiting for the telltale signs of planets that were not only capable of storing quinta essentia, but had advanced to the point that there would be an abundance, enough for them to travel there, to revitalize themselves, perhaps reproduce, and then begin the process all over again.

He might have felt burdened by this new information—he should have—but the truth was this was incredibly freeing. To know that he might have the ability to help gave him hope and a sense of purpose that had been nearly snuffed out by their past failures. And David was right. Whatever success they'd achieved

last time might have had everything to do with Sean himself. If he denied David's request, there was no telling whether it would work for anyone else, or, even if it did work, how long it would take to perfect.

He had to do it. Not for David—certainly not for David—but for everyone else. For Therese. For his family. For the world.

"Where do we begin?" Sean asked.

David's smile was slow in coming. He waved to the corner of the large open space, where a set of stairs led down. "In the basement, Sean. We can begin right now."

Δ

In the basement of the factory was a bright set of equipment, clearly well cared for, that warred with the dark wooden rafters and uneven stone walls. Vats of glass containing a glowing amber liquid could have provided much of the light, but there were lamps of *quinta incendia* placed all around, their shaded points of light burning bright sapphire blue.

Sean stepped into the padded leather seat within a complex set of mechanical arms and lenses and tubes, and when he was comfortable, Vidnas, David's assistant, secured him into it using triple-thick leather straps. As usual, David had thought well ahead. Sean's ligature was strong, and they couldn't risk him ripping his way out of the seat during the experiment itself.

Vidnas, his brown, almond-shaped turban a match for his expressive eyes, paused near Sean's side. He smiled, his dark moustache and beard accentuating nearly perfect teeth. "Are you feeling well, sir?"

No. Sean *wasn't* feeling well, not now that he was so near a return to the experiment that had devoured his future. He couldn't keep the strange feelings of emptiness from his mind, the feelings of utter loss and loneliness.

"Feeling as well as I ever will," Sean replied.

Vidnas patted his shoulder and moved to the set of metal stands nearby. Each stand held an armature with a set of lenses that would, when David gave the signal, be situated in a spherical formation around Sean's head.

"Ready?" David said.

"Give Therese the letter, won't you? If anything goes wrong?" He might have told her himself, but she would never have allowed him to come here and submit himself to this. She'd kill him first.

"Of course I will."

“And tell her I love her?”

“Of course.”

Sean nodded. “Then I’m ready.”

With that, Vidnas and David began moving the lenses into place. They adjusted the clamps and telescoping rods so that the armatures rested at the proper angle and position. Each of the armatures held twenty-five lenses with watertight jars clamped to their backs. The jars were fed by tubes connected to a series of pipes that would be filled from the glowing vats of quinta integra, an extremely difficult-to-stabilize mixture of the four basic elements: incendia, aeris, terra, and unda.

As each set of lenses was moved carefully into place, Sean’s heart began beating harder and harder. His breath came rapid as a frightened hare.

“You’re about to hyperventilate,” David said as he glanced over. “Breathe deeper. From the stomach, remember?”

Sean did, and slowly the entire chromatic apparatus was maneuvered into place around him. Outside the sphere, Sean saw segmented visions of Vidnas and David moving about, making final preparations.

And then, at last, David gripped the valve that would begin the process. “Last chance,” he said with a melancholy smile.

Sean couldn’t help himself. He laughed. It was the exact same thing David had said just before their first experiment.

“Into the great beyond,” Sean replied, an echo of his own reply from fifteen years before.

David gave him a nod and strapped a set of thick, leather-wrapped goggles around his head—another incredible advancement, for surely David had developed them to view some crucial aspect of the experiment as it happened. He nodded to Sean—looking to all the world like some strange Jovian insect—and then threw the handle of the valve. The tank levels slowly decreased as the viscous amber liquid inched through transparent pipes. Slowly but surely, the quinta integra crept toward the narrow rubber tubes. The liquid split and split again, surrounding Sean like a hydra, each serpent doubling when its head was severed.

The liquid began filling the glass jars behind the lenses, and as they did, as more and more of the ingenious lenses David and Sean had developed were backed by the quinta integra, Sean’s mind began to expand.

He felt more than his own body. More than this room.

He floated free among the aether.

Became one with quinta essentia.

How beautiful. How utterly, unexplainably beautiful. A vast, endless world of chromatic shapes. He saw this place, this old abandoned shoe factory. He saw Vidnas and David and his own body. He saw the rundown streets near the factory, and the River Wear that wound its way through Durham. He saw the University, the whole of Durham, the whole of England. He could feel Earth itself, the solar system, the Milky Way galaxy. Faster and faster it went, this expansion, until, just like the last time, he felt as though his mind were trying to encompass all of creation.

It was too much.

His mind was drifting from his body, which was exactly what had happened to him the first time they'd tried, exactly how his mind had been irreparably harmed in its refusal to control his body as it once had.

David had told Sean about the changes he'd made to the elemental serum and the lenses themselves. In all likelihood, he'd said, the unchecked expansion should be limited, which should allow Sean to exert some amount of control.

Sean...

He wasn't able to, though. He couldn't. And his mind continued to attenuate as it stretched outward, through and throughout the fabric of the cosmos.

Sean, can you hear me?

By all that was good, he couldn't do it. He would become lost this time. Lost for sure.

Sean, you must listen. The pods. They should be a sink for quinta essentia. They're consuming it, Sean. Look for them. Feel for them. They'll ground you.

Sean felt, only for a moment, his body tightening, heard a primal scream issuing from his throat. But then those sensations were gone, and he was alone once again. Alone with his thoughts in this endless, universal medium.

What David had said, though... The pods.

They were a sink. Consuming quinta essentia.

No other known beings fed on the fifth element. Not directly. That simply wasn't the way the universe worked. The very fact that this natural law had once seemed so immutable and now seemed every bit as implausible as a geocentric universe grounded Sean. It drew him back toward his physical form and nearer to that very phenomenon.

And that's when he felt them.

The pods. The pooling of intent near him, around him, surrounding, essentially, all life on Earth. Like a subtle adjustment of a lens bringing a landscape into focus, he could sense every part of them, and now that he could, he realized how very familiar they were. He'd felt them before, in that event fifteen years ago when he'd first entered the quintessence.

How could he have forgotten it?

They had called to him then, and they were calling to him now. He felt from them a yearning, a primal urge that spanned millennia. It wasn't malicious, as his memory had somehow made it seem, but benign. He'd been so fearful of it years ago. He was *still* fearful, but not for his own sake, not any longer. He was fearful the Jovians wouldn't understand humanity, that in their curiosity they'd trample the minds they'd come to examine, or they'd decimate life on Earth even as they studied it.

His heart, David. He's going into tachycardia.

The pods were reaching in the only way they knew how. They were holding their hands out to him, ready to take him should he wish to come.

Should we continue?

A pause, and then, *Just a moment longer.*

Unlike the last time, the urge to accept their call was strong and growing stronger. He flung his mind outward, wondering what grand thing would happen.

Now, Vidnas. Shut it down.

And suddenly the feelings diminished.

He grasped for them, but they became dimmer and dimmer until—like a mote of light that had finally burned itself out—they winked from existence.

*

When Sean woke, it was to the sounds of clinking, like crystal goblets at a party. Had he come home? Was Therese readying for a party?

And then it all came back in a rush. David. The lab. The pods, and the way they'd called to him.

He forced his eyes to open and thought he was still in the basement of the warehouse, but when his mind cleared, he realized it wasn't Vidnas before him, but a nurse in a white hospital gown, and she wasn't cleaning the bell jars and the lenses that had surrounded him, but the set of vials the University required to refresh the liquid stored within the core of his ligature.

He felt so very weak. And his muscles, his joints, his skin felt as though they'd been reforged improperly,

leaving him more broken than before. Though he tried to stifle it, the pain brought on a weak groan that nevertheless attracted the nurse's attention.

"Are you feeling very well?"

"I'm—" Sean could barely speak, so slurred were his words. "Where's David?"

She continued about her work. "David who, sir?"

"David Lock."

She shook her head. "Never heard of him."

He stared at her. Surely David had brought him here. "How did I arrive?"

"You were found on Stockton Road, unconscious. Constable Adams found you and brought you in, and a good thing he did. Your fluid had nearly turned. Haven't you been keeping an eye on it?"

"Of course he has." Sean turned his head to find Therese standing in the doorway. She strode in to stand by the bedside. "Each morning. You can set your watch by it."

The nurse gave Therese an icy stare. "Then I'm sure I don't know why his fluid had degraded so." And with that she topped the vials and left.

As the heels of her white leather shoes clicked away, more and more of the puzzle fell into place. He'd asked David why he didn't perform the experiment on himself. *I can't*, he'd said. *Not yet, in any case. I have to take measurements. I have to refine the process.*

He had to refine the process, which implied there would be another run of the experiment. He had needed Sean. He'd said so himself—Sean was the only one who'd entered quinta essentia so far—but he'd used Sean so that he could perfect the parameters surrounding the experiment. Which meant that he'd planned all along to do it himself afterward. That was the only explanation for leaving Sean as he had—so that he could remain anonymous in Durham until it was too late.

Therese stared down at Sean. Her hand lifted, but then she lowered it again. She knew from experience that even holding his hand at a time like this would cause him discomfort, but Sean reached out and took her hand, squeezed it, oblivious to the pain. "We have to talk."

Δ

As Therese sat by his bedside, her eyes stared through him. Her hands were shaking. She glanced toward the cluster of clear vials hanging above Sean, the vials that had allowed him to retain some sense of normalcy in his tortured existence. The tears gathered in her eyes finally fell down along her cheeks. "I can't do it,

Sean.”

“Therese, I can’t go on like this.” He lifted his arms, the whirring of his ligature emphasized his point much more eloquently than he could with words alone. “It’s worse than before.”

Therese was crying freely now. “I’ll *help* more. We’ll hire a man to come to the house a few days a week. It won’t be so bad after a while.”

Sean took her hands in his. “I’m going to a better place.”

“I can’t... I can’t just let you go. I don’t know what I’ll do without you.”

“You’ll go on. You’ll be free.” Before she could speak again, he squeezed her fingers gently. “Now, Therese. There’s so little time left.”

She stared into his eyes for a handful of heartbeats, then another handful more. After wiping her tears away, and a short but powerful nod, she went to work. More quickly than any of the nurses could manage, she disconnected each of the feed and return tubes from his ligature. She helped him up in his bed, a veritable angel for how strong she was being, how little of his own power he needed to exert, lest he moan and the two of them were caught. She disrobed him and helped to pull on his clothes. After giving him a familiar look, asking him if he were ready to be on his own, he nodded, and then she leaned in and gave him a deep kiss.

Bliss, he thought. A more tender thing he had never felt.

She left the room, leaving the door open a crack. “Who’s been tending to Sean Brannon?” Her voice was so loud the entire ward must have heard her. Some unintelligible reply came, but Therese talked over the woman. “While you’ve been ensuring the levels were correct, he was dry as a bone. Did you even see the color of his urine?” A soft reply came. “No, I’ve *given* him water. He’s hydrated. What I want to ensure is that he manages to remain that way while I’m gone.” Another mumbled reply, also cut off. “No, *I’ll* be speaking to the attending physician, thank you very much!”

“Bless you,” Sean said, as he slipped from the room and limped toward the stairs at the end of the hall.

Δ

Sean reached the warehouse at the end of an excruciating walk. He would normally have loosened up by now, but things were worse than ever. His knees kept wanting to lock up, and his hips and ankles burned so badly he collapsed several times. But he got up, fixated on the siren call of the pods—in some ways a distant memory, but in others the entirety of his being.

The massive, rolling door into the factory was closed but not locked. He pulled it aside and made his way down the stairs to the darkness, staggered to the doorway where the brightness of David's lab was revealed.

David was sitting where Sean had sat less than a day before, and Vidnas was putting the last of the armatures into place around his head.

"Stop!" Sean called.

"Sean?" David said, his head moving back and forth to get a clear view of him.

"You can't do this, Vidnas."

Vidnas stared between David within the sphere of chromatic lenses and Sean, clearly startled, but more than this, with a glimmer of embarrassment.

"You can't let him go," Sean went on. "You need him. The *world* needs him."

"Sean, stop it," David said. "This needs to be done."

"And I'm the one to do it." Sean kept his focus squarely on Vidnas. He spread his arms wide and strode forward. "I'm ruined, Vidnas. I am ruined, and David is whole, in mind as well as in body. Can you even conceive of what the world might lose today were he suddenly gone from it?"

Vidnas stared deeply into Sean's eyes, but before he could say anything, David began pushing apart the stands that held the lenses, at least enough that he could extricate himself from them. "Get him out, Vidnas! We have to get him out!"

"Don't listen to him," Sean said, wincing as he took a step forward, his arms still outstretched. "You cannot."

It was clear from the expression on Vidnas's face that he was considering Sean's words, but he stepped back when David strode to a nearby workbench and picked up a syringe. He filled it with a clear liquid and then began walking toward Sean.

"Don't do this, David. Let me go. Please. You owe me this much."

David's face was red, and the expression was more intense than Sean had ever seen. "I was the one that brought them here, Sean. Not you."

"I'm as much to blame."

"You aren't!" David's face was red. Blue veins pulsed on his forehead and along his neck. "I practically forced you into that chair. I ran that experiment and then watched you suffer and tried to pretend it was all your idea! The Jovians are here because of *my* actions, and I cannot, I will not, allow you to take my place.

They're *my* responsibility."

"Responsible or not, I'm not going to let you do it."

"That, my dear friend, is no longer up to you." He strode forward, holding the syringe high, out of Sean's grasp, while using his other hand to grab the ligature rods connected along Sean's collar bones. "I'm deeply sorry for everything that's happened to you. I was a fool, then—young and worried for my career. I should never have betrayed you."

He tried wrestling Sean to the ground, but Sean was not powerless. It caused pain, but his ligature was a beautifully designed machine. He grabbed David's shirt with one hand, grabbed the arm holding the syringe with the other. He squeezed David's arm until he cried out from the pain and dropped the syringe.

David, knowing the tide was turning, grabbed him about the waist and pushed him, knocking him off balance and sending him crashing to the ground. But this was ineffectual, too. It was only a matter of time before Sean got the upper hand. He wrestled David down to the cold floor, began crawling on top of him, all while David scrambled uselessly at Sean's back.

Then, suddenly, he was no longer able to hold David down.

Sean's mind raced. He didn't understand until his time in the hospital came rushing back to him. How could he have been so foolish? David had reached the cluster of controls—the mind of the ligature, in essence—at the center of Sean's back. The hospital would have removed the panel that normally protected it. He hadn't thought to have Therese put it back on before leaving.

The ligature was losing strength quickly, forcing his own muscles to do more of the work, which was causing more and more pain.

David tried to rise. Sean grabbed his shirt, trying to hold him in place, but it was a simple matter for David to wrest his shirt free of Sean's weakened grip. He stared down at Sean with sympathetic eyes, eyes full of regret. "I'm truly sorry, Sean."

But before he could do anything else, his eyes went wide.

Then they went cloudy, and his body fell limp.

Into the waiting arms of Vidnas.

Sean could only stare as Vidnas laid David gently down and moved to Sean's side. He rolled Sean over and did something at the open panel, and the strength to Sean's ligature suddenly returned.

"Thank you," Sean said as Vidnas helped him to his feet.

Vidnas said nothing as he helped Sean hobble his way toward the padded seat David had so recently

occupied.

Δ

Sean stared up at the lenses, watched the amber liquid flow through the tubes and bifurcate over and over again until all the lenses around him were aglow.

As before, his mind began to expand, slowly at first, but then in wider and grander increments until it felt as though he'd swallowed the cosmos.

He'd come to understand quinta essentia in a way he'd never expected. It shouldn't be so surprising; he was a part of it, after all. All life was, from microbial life all the way up to advanced life forms—mammals, humans, the Jovians—and it made him wonder whether quinta essentia itself weren't some form of life. A grand, enigmatic system not understandable by him—not yet, at least—but perhaps by the Jovians. He hoped he might one day share in such knowledge. Perhaps add to it.

For that was why the pods had come. They had come to find the beings that had reached out to them. They had come to fold those into their greater consciousness. And when that was done, they would move on. There were other worlds, other forms of life they hoped to commune with, which meant they would eventually uproot; they would travel to another world, and find more. And more after that. He could feel them already, places where haulms had been seeded in other worlds, which were now waiting to be visited.

Like all life, the pods were evolving, slowly accreting knowledge and wonder and experience to...to do who knew what? Sean certainly had no idea, but he hoped one day he might.

With care, he drew his attention inward, back toward Earth. The collective minds of the pods became more and more clear. In fact, so did *all* life on Earth. It felt like a thing he'd always been in touch with at some level, but now, as if a light had been shone on it at last, he could sense it separate from himself.

He recognized he was merely delaying now. The pods were calling to him. And for his part—though he was not without regrets—he knew he was ready.

And so, after one last longing glance at the world around him, he reached out.

And allowed them to lift him up.

Down Beneath the Bridge Yet Unbuilt

Sarah Pinsker

Brooklyn, 1870

One thousand five hundred and ninety five feet, six inches. That was the first number Pat ever had trouble visualizing, though she memorized numbers the way other people memorized scripture or songs. When her father said one thousand five hundred ninety five and a half feet, the number had sailed away into the sky, huge and daunting, buoyed by zeroes and all its smaller parts. Sixteen hundred feet, almost. Nineteen thousand two hundred inches, less a couple, though her father would have chastised her for generalizing when precision was called for. A bridge spanning the entire East River, all numbers and concrete and granite and steel. It wasn't a bridge yet, or even a tower. Just a hellish miracle of a waterproof chamber, sunk beneath the East River, where men—and first her father, then Pat—dug their lives away.

She had studied until she understood those big numbers, but now that she could visualize them, could picture the bridge not yet built, the distance across the river didn't matter nearly as much as the inches underfoot. Her job was to dig; the numbers kept her company. She'd never been formally schooled, but her father had been a bookkeeper in Ireland, back before they had come here and he'd been forced to get a job in the caisson. Back before the caisson killed him.

"Numbers are reliable," he'd said, sitting with her in his shop back in Ballyshannon. "Numbers have power."

In Ballyshannon, he had a shop and the family had three whole rooms above it, instead of all ten crammed into one room in a sour Brooklyn Irishtown. When he taught her counting and basic sums, the numbers had climbed up off the pages and performed tricks for her. Zeroes bounced like her younger siblings, changed the nature of those around them; nines absorbed themselves in their own magic. Sixes danced with eights, muscular sevens made inscrutable music, fours twirled and twined, forming their own squares.

"Did you see that?" she had asked her father, just the one time. A two flipped backward across the table while she practiced division.

He looked up from his ledger. "See what?"

The two jumped onto his hand and leapt from finger to finger, but he didn't look down at it.

"Nothing. Forget it." After that, she didn't mention the numbers again to anyone. She wasn't sure, but she didn't think it happened for anyone else. Twenty to her father was ink on a page, or a notion in his head. It didn't shimmer before him, full of potential, ready to burst into its parts. Twenty shattered into four fives, or five fours, or two tens, or ten twos. It teemed with ones, or some lucky combination of paired threes and sevens.

She learned to look at the numbers in multiple ways, but to see and talk about them as others saw them, to keep their magic to herself. Her father put his hand on her head when she did complicated sums, a mathematical benediction. She tried to remember that feeling when she grew tired or sad, or when she sweated through her shirt down in the caisson.

Down in the caisson, thigh deep in mud day after day, she listened when the other men talked, and took their numbers and made them her own. The four brothers Russo, the two dollars a week they pooled to send back to their mother in Sicily. Ahmed, from a place called Tandja, who counted in his own language under his breath, though his numerals looked the same. The Schmidts, who bet each other halfpennies that the father couldn't out-dig his son. Some days he did, some days he didn't. They spoke German, but everyone got the gist, and others put money down as well. The numbers spun before her, sank and rose in the mud. Listening helped the time go faster.

She got some figures from Roebling himself, the chief engineer, who often came down to watch them work, though the whole bridge project was his and he could have spent all his time in an office if he had chosen to do so. His figures were huge and exciting. The expected height of the towers, the expected depth at which they'd hit bedrock. Such exact numbers!

Pat took comfort in the fact that on paper all this mud looked like towers. Between the two towers, four steel cables of nineteen strands, invented by the elder Mr. Roebling. The bridge had killed him, indirectly, like her father, before the construction had even started. If the story she had heard was correct, a ferry had crushed his foot while he inspected the bridge site, and then an infection set in.

She didn't like those stories. She found the stories told by numbers much more reassuring. The numerals clambered over each other to illustrate Mr. Roebling's figures. Sometimes Pat shushed them, or

tried to ignore them, but they grew insistent, excited, maybe even proud. Without them, there would be no caisson, no diggers, no tower, no bridge. Without them, she'd still have her father. When she thought that way, she squeezed her eyes shut and dug in the dark.

Numbers found their way in. The caisson weighed three thousand tons. Layered timber courses fifteen feet thick kept the river off their heads. Nobody knew the maximum depth to which they would sink before finding bedrock. They kept sinking. Everyone kept digging and hoping the bridge didn't claim them next.

If she thought about the elder Roebling and the ferry, her thoughts came round to her father. Her father had worked in this same caisson, seventeen feet above where they were digging now. Seventeen feet. They cleared six inches a week, two feet a month. Eight months and two days and seventeen feet ago, her father's heart had given out, on his walk home through Brooklyn. One of the other men had helped him to their door, sweaty and near unconscious.

He had come home sick before, with agonizing cramps in his legs and his stomach. Caisson sickness, they called it, though nobody knew what to do for it other than rub him with whiskey. This time he never fully woke up, not even when Pat counted nines standing by his bedside.

What good were the numbers if they didn't do what she wanted? They rubbed up against her legs like cats, cold comfort. She banished them from the house, but they found their way back in, again and again.

A few evenings later, while Pat waited for her father to return from the dig, and reminded herself over and over how he wouldn't be coming back, Pat's mam had said to her, "Mary Pat, there's nothing for it now. You're going to have to work."

Her seven siblings were too small to be any use. Mam cut Mary Pat's hair short and dressed her in her father's old clothes. She stood tall and broad like both her parents, as tall as both of them at thirteen. She got a job in the caisson, in the same place that had killed her father, taking his name and declaring herself his son. She worked hard. The only thing was she couldn't take off her shirt as most did or relieve herself in the corners.

She remembered the first day, as they prepared to go down below the water.

"You're Patrick Donnelly's son?" A stocky Irishman asked the question, and she held her breath for a moment, hoping he didn't know her father's eldest son was only ten years old.

Pat drew herself up, and in doing so realized she stood taller than the man speaking. She widened

her stance to match his, and scratched herself the way she had seen her boy cousins do. His eyes widened. She held her ground.

“Aye,” she grunted, and looked away to hide the tears in her eyes.

“We tried to save him. I’m sorry we didn’t. John Corcoran.” The man held out a rough hand, and Pat shook it.

“Pat,” she said, trying the new name on for size.

Once or twice that day she heard people whisper about her, but they needed able bodies, and she worked as hard as anyone. Hopefully they’d take her silence for sadness, not fear her voice would give her away. Voices didn’t tell much down below, anyway. The pressurized air pitched them all high.

She soon realized she wasn’t the only quiet one. The Russos laughed and teased each other; the Schmidts traded mutterings in German, but a good number worked without speaking. Anyone laughing was trying to ignore where they worked and what they were doing. She didn’t blame them.

The shifts lasted endless hours. The water was icy, the air stifling, the pressure near unbearable. Sweat ran down their faces and salted their eyes, and they had nothing dry to wipe it away. The whole world was dark and damp, fifty feet below the river. The caisson sank six inches a week, an inch a day. An inch. Just more than a finger’s breadth, and it took all these men working in shifts around the clock.

The noise and the ear pressure were the worst parts. They threatened to drive her numbers from her head. Two hours more, she told herself, then later: two hours more. She hung that number in her mind. Twos were steady; they had rules. When Roebling came down, he recited numbers too, and she grasped those and repeated them until they too were her own, pretending they could ward against blowouts, against pressure, against the sickness that hit some men in the hours after they reached the surface, against weakened hearts.

Easier not to think on it as much now that they had sunk so far below the space where her father had worked. Still the same cavernous box, the same beams. When she first arrived she had looked at the calcium-lamps and candles and wondered if they still burned the same wicks that had provided his last light. This mud she stood in; was some yet the mud where he had worked? This air, forced in as the mud was forced out; did any remain in some stale corner that had been part of his last breaths?

But they had dug, and bailed, and sunk at a rate too slow to measure, and the weeks passed until the place where he had worked hovered by the ceiling, and then the water pushed down, and they sank closer to bedrock, and they landed in a new place, absent any trace of his presence.

She reached for him in other places when she thought he was gone from the main chamber. Surely his feet had trod the same planks. If she stowed her lunch sack on a different peg each day, surely one must have been the one he used. Trudging up the stairs, moving through the airlock, waiting while the pressure changed; all things he had done every day. Before, they had shared numbers. Now they shared more tenuous connections.

“Have you seen Roebling’s wife comes down to the site with him sometimes?” Declan Fitzgerald asked. He had a deep voice outside the caisson, but down here his voice traveled thin and reedy, like a child’s.

Pat gave a noncommittal grunt.

“I’ve seen.” Corcoran, working on Pat’s other side, glanced at her. “I’ve heard she knows engineering herself. A woman. Imagine.”

Pat dug her shovel in but swung it a little wide, to catch his boot.

“Oi. Watch what you’re doing.”

“Sorry,” Pat muttered, though she wasn’t really.

She lingered after her shift, as she often did, to keep from having to walk with anyone. The engineers stood to the side, watching one shift exit and another enter. Pat stole a look, and sure enough, a woman stood near the men, a tall and handsome woman in an expensive looking dress.

Pat hadn’t seen a dress that fine since they had come to this country, and not many before that either. And here this woman was, letting her hems pick up muck in the bridge yards seemingly without a second thought. Pat stood a while longer, counting by fives, trying to work them up to words in her head.

“Good afternoon,” she finally said, when the woman drifted a few feet from the group.

“Good afternoon,” Mrs. Roebling replied. “Do you work below?”

Pat glanced down. Her clothes were nothing but sweat and mud.

The woman looked closer, emphasized the ‘you’ when she asked her question a second time. She knew. Pat met her eyes. “Yes.”

“Why?”

“My father died. We need the money.”

“Have you been down there long?”

“Eight months.” Eight months, two days.

“Be careful,” Mrs. Roebling said, with layers in the words Pat wasn’t entirely sure how to unpeel.

Pat shrugged. "Men get sick every day."

"I know."

Pat started to walk away. Seventeen. She had spoken seventeen words without managing to say anything that mattered.

"I can do maths," she said under her breath. A robust four danced around her feet, mocking her. She resisted the urge to kick.

"Are you educated?" Mrs. Roebling called after her, though she couldn't have heard. "Can you read?"

"I can read and do sums." Pat allowed some pride into her voice.

"If you ever reach a point where you want to use those skills instead of your hands, come see me. I may be able to help."

Pat tipped her cap. What a thought! To get paid to use numbers. And the woman hadn't even looked bothered when Pat's voice came out Irish.

She had a mile's walk home. She had done it so many times she could count it down backward instead of forward and reach the crooked little tenement where they lived without an added step. Forty rolled into thirty-nine, into thirty-eight. The digits kept pace, jumping from cobblestone to cobblestone. Zero held the door open for her, then trailed her up the stairs.

As always, entering her family's room, she was overwhelmed for a moment by the low ceiling and the tight walls and the solid floor, so different from the space where she spent her days. The air was cooler in here too, drier, saturated with the odors of babies and food. After a scent-deprived day in the caisson—blessedly, given some of what was in the water, and the men who relieved themselves in the corners—it was almost too much.

Her siblings sat on the beds, eating soup, except the youngest ones, who crawled around the floor. Pat pulled little Tommy out from under a sagging bedspring and collapsed onto it. Her Mam handed her a plate laden with beef and potato. Common wisdom said red meat warded off the caisson sickness, so her mother tried to give her beef when they had the money. Her siblings didn't even try to hide their jealousy.

"You can have beef when you're old enough to work," her Mam told them.

Pat was ravenous. In between bites, she recounted the meeting with Mrs. Roebling to her mother. "Do you think she meant it?"

Her Mam frowned. "Perhaps. But what does 'may' mean? And 'help' isn't the same as offering a job. And if she has anything to offer, wouldn't they likely be household jobs? You make more digging than you

would dusting.”

Pat’s spirits fell. Maybe her mother was right. The experience dimmed in the telling.

Her mother reached over and took her hand. “Maybe once the caisson hits bedrock, unless they’ll take you on for the tower. There’s years yet to go, if you don’t go growing breasts. When all this is done, you can go to her. If it was a true offer, maybe it will still be there.”

Pat didn’t say “but what if she forgets?” She didn’t say “but what if she means now?” She ate the rest of her supper in silence. The next day, she walked back to the bridge yards, back to the airlock, back to the caisson, back to the muck. And the day after, and the day after that. More days, more inches, more buckets dredged from the river’s bottom.

She wanted to talk to Mrs. Roebling again, but instead she buckled down and worked harder. Counted. The number of times her shovel hit stone. The number of buckets they sent up to the surface. She gathered strength from each successive number.

Numbers were reliable, as her father said. Numbers had power.

*

A few days later, fire engines clanged past her on her walk to work, heading the same direction she was going. People on the street shouted to each other that the caisson had exploded, the whole night shift had been killed, that men were trapped.

Pat quickened her pace, picturing a finger of lamp oil as it spread up the wall, fire chasing it greedily. She knew what fire could do down there: consume the oxygen, weaken the walls, bring the river down into their chamber. Existence was delicate. It depended on numbers, on the strength of timber, on pressure inside weighed against the pressure outside.

In the bridge yards, firemen shouldered their hoses. Crowds made their work more difficult. Men who had come up from the night shift—none had been killed, contrary to the rumors—men waiting to go down, gawkers trying to catch a glimpse of fire under water, police trying to keep the crowds back.

Some of the men who had spent the night below relayed what had happened. It had been going for several hours already, burning silently through the roof timbers, before anyone noticed it.

Roebling fought the fire the whole night in the burning chamber with a few men of his choosing, while the rest went about their work as usual. They heard Roebling debating whether to flood the whole caisson, whether they had dug far enough for the bridge to rest if they weren’t able to go back down. All week, men had been saying how close they were. Only another foot or two to dig. Ten days’ work.

"'Twas eerie," said a weary-looking Englishman with a wilted black mustache. "We saw no smoke nor fire, nor smelled it, but we knew it was there, eating through the roof or the walls, and maybe it would kill us and maybe it wouldn't. Now, who's buying? I need a drink."

The night shift men headed off to a pub, but Pat stayed, watching. Watched as the decision was made to flood the caisson. Pat counted thirty-eight hoses streaming into the water shafts, from fire engines and tugboats and a fireboat. Flooding didn't mean their work was done. That depended on what the engineers found when they let the water out again. The whole bridge depended on whether the caisson remained intact, and if they had gotten close enough to bedrock already.

They kept the caisson flooded for two days. Pat still walked over to watch and do whatever needed doing, in hopes of collecting her paycheck. She had new numbers to play with. It had taken one million three hundred and fifty thousand gallons to fill the caisson with water. An impossible number to picture except all Pat had to do was imagine the cavernous caisson, its air as thick as water already, and the prayer men put up every day that the river would stay outside the walls.

Monday morning, they went back to work. The foremen promised the fire had been extinguished, the caisson was still safe, even if hidden flames had eaten through some of the timber above.

It seemed little changed when they entered. A block crushed here and there, a post down, everything a little wetter, if that was even possible. The ceiling felt closer. The river even more threatening than before.

"Almost there," John Corcoran repeated to himself, beside Pat. "Almost there."

Almost there, Pat echoed. The more she threw herself into the work, the less time there was to think. Numbers filled her head, begged to be let out. She held them in. They didn't do her any good.

She held them in even when Roebling came through the chamber, often enough now. Every day, practically. He stood behind them, observing, wondering aloud at the pressure the caisson had withstood, and at the damage the fire had done, more extensive than he had thought at first.

She took solace in the fact he kept coming down below. He wouldn't join them if he truly thought it unsafe. Masters didn't risk their own lives; they left that to the two dollar men. Comforting logic. Every time she saw him, she repeated it to herself.

His was the last voice she heard before her ears exploded, the worst pain she had ever felt. The air rushed away. She looked to Corcoran, who said something, only there was no hearing anything, no air to carry speech.

Relief surged through her for a moment, a selfish relief that Corcoran looked as pained as she did.

Whatever was happening was happening to them all, and this wasn't her death come for her individually. Then the relief vanished, with the thought death might have come for them all, the providers for all these families, these men who had let her work side by side with them without question, all drowned in an instant.

The lamps guttered. Water poured in, and the air itself was too wet to breathe. Men ran everywhere, adding to the confusion. Pat flattened herself against a pillar. Tried not to get knocked over. The others pushed over each other to get to the airlock; she couldn't see them but she felt the jostling and splashing.

The water rose higher than it ever had. It had taken one million three hundred and fifty thousand gallons to flood the chamber on purpose, but the river carried more, and this was the river coming in to replace the escaping air. She could try to get to the airlock too, but she didn't trust herself to move. She counted the seconds. She had no voice, but the numbers spilled out as if she had spoken them. They hovered in the thickness around her.

Pat squared her shoulders, squared her stance. She kept counting. One hundred and seventy nine seconds, one hundred and eighty. Digits swirled. One hundred and eighty was a great number. Multiple of nine, of ten, of twenty, of three, of ever so many twos.

"Do something useful," she said to them between the seconds. Something changed in the air.

"I mean it," she said. "Do something."

Each time she opened her mouth, numbers spilled out. Numbers Roebling had recited like his own talismans. The tower would stand two hundred and seventy six and a half feet above the water. She loved that half foot, loved the half foot that followed the 1595 her father had once given her. Roebling had built a bridge on paper with figures so exact people were willing to give him money for it, to risk their lives for it.

She would never see the bridge, she was suddenly sure. Never knock on Mrs. Roebling's door to ask what she had meant when she had said, "—if you want to use those skills."

Somewhere below them, bedrock. Far above: air, earth, sky. Our caisson, our tomb, Pat thought. 168 feet by 102 feet by 14.5 feet. Not that the measurements mattered to a blowout, but as she thought the numbers, they appeared before her.

The numbers trembled, then dove beneath the water. Pat kept counting, adding digits. Two hundred and twenty two, two hundred and twenty three. She pictured the change in pressure, the river within, the river without. Was the pressure escaping? There were only a few options. Airlocks, water shafts, supply shafts. Which one? She had spent so many days down below she didn't need light to find her way.

She ventured away from her pillar. The sevens, those muscular sevens, kept the panicked men from trampling her as she splashed across the chamber.

On her third try she found the culprit, a pile of stone and gravel holding the door open at a supply shaft's foot, allowing the air to escape. She began to shift the stones. Her numbers helped her, sliding between the rocks, loosening them, kicking away gravel. A few men—Roebbling among them—joined her a minute later. They scrabbled at the blockage together, side by side, until the door finally shut. She kept counting.

Around nine hundred and three the pressure returned to normal.

Shouts went up in the chamber, relief in a half dozen languages. Pat cheered to herself. She didn't know if her numbers had done any good, but she couldn't help thinking they had. If nothing else, they had kept her calm.

She started a new count, to the shift's end. Another for the ascent, and then one more to count the steps to Roebbling's house in Brooklyn Heights. She was filthy and soaked but she wanted to make this trip now, while she had the nerve. She knew all the things she wanted to say to Mrs. Roebbling:

My name is Pat. You said you might be able to help. My father taught me mathematics, and then he died and his death wasn't even counted against the bridge because he was on his way home when it happened, not down below. When I look at the river I can see the bridge that isn't there yet, a bridge made of numbers and angles and calculations. I'm good with numbers. I know how to make them work for me.

Or maybe she would let the numbers speak for themselves, all the figures she had captured from Roebbling and the other men down in the caisson. *Two dollars a week. Seventeen pounds of pressure. Six inches. Three thousand tons. One hundred and fifty nine feet above the roadway. Forty-four feet below water. Four steel cables of nineteen strands. One thousand five hundred ninety five feet and six inches. I miss him in numbers that haven't been invented yet. I'm good with figures. Give me a chance, please.*

She knocked on the door. Twice, with purpose.

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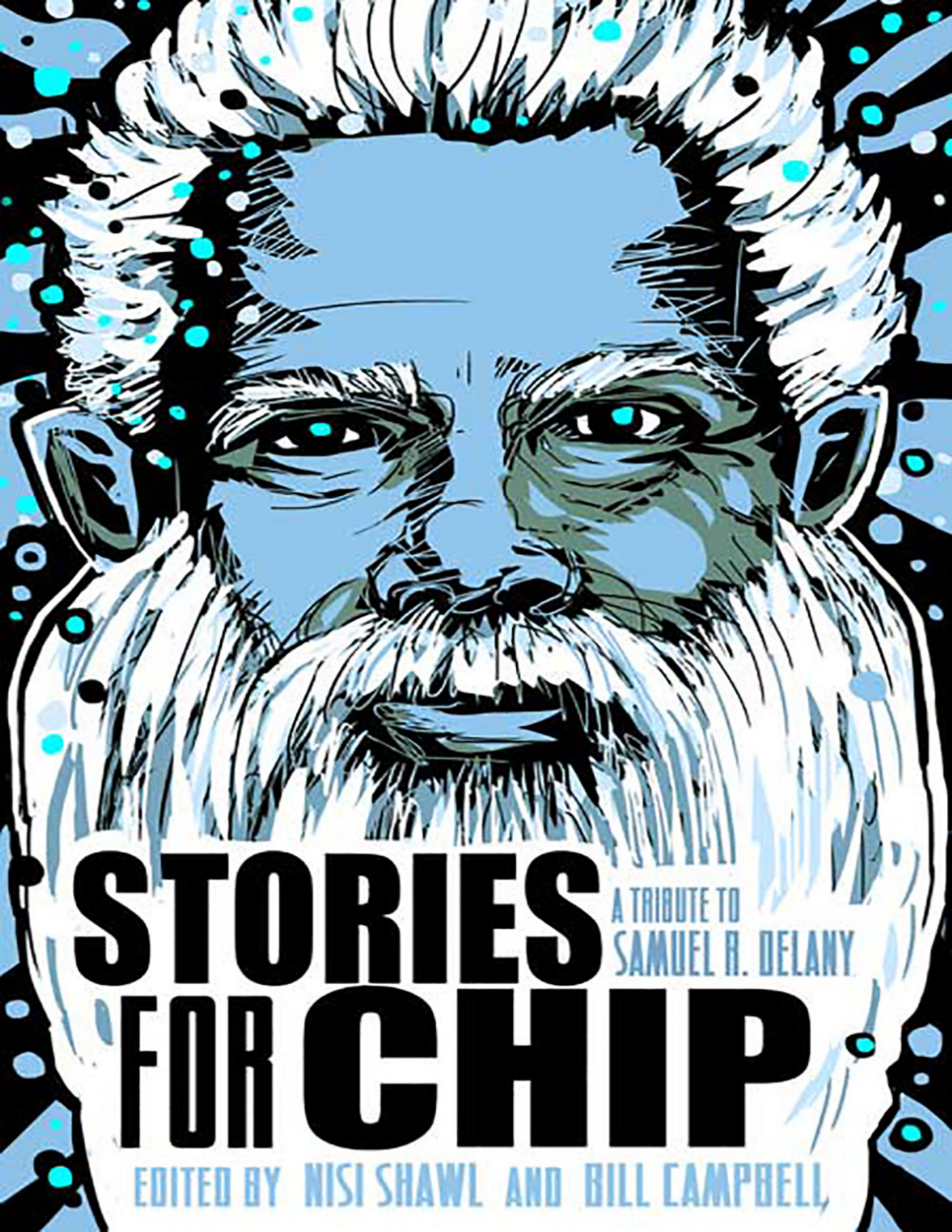
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